EXHIBIT 142

Site Name: Solberg AFFFs
Analyst: Krista Barzen-Hanson
Date Analyzed: 20. August 2016

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Method Overview: The method is based on a micro liquid-liquid extraction of groundwater into an organic phase followed by direct analysis via large-volume injection HPLC-MS/MS.[1,2] Ten classes[3,4] and a total of 52 individual per- and polyfluoroalkyl substances (PFASs) are determined by this method.

The AFFF samples were run at three different dilution factors to capture all analytes. For all low abundance analytes, AFFFs were diluted 1:10,000 for analysis. A 20 µL aliquot of AFFF sample was diluted in 10 mL of methanol; then 75 µL of the once-diluted AFFF was prepared in 1.5 mL of methanol. The second dilution factor of 1:100,000 captured most of the abundant analytes. To prepare the 1:100,000 dilution, 25 µL of the once-diluted AFFF was further diluted in 5 mL of methanol. For analysis, 1.46 mL of the twice-diluted AFFF was prepared in 1.5 mL of methanol. The final dilution factor of 1:1,000,000 captured the FtTAoS class. The 1:1,000,000 dilution was prepared by delivering a 150 µL aliquot of the twice-diluted AFFF in 1.5 mL of methanol. The Solberg Mil Spec 6% AFFF at 1:100,000 was run in triplicate.

Definition of Terms

<LOD	Signal-to-noise ratio less than 3
<LOQ	Computed concentration fell below the Limit of Quantification (LOQ), which corresponds to the lowest calibration curve point when applied to the most dilute sample (in this data set 1:10,000)
< ½ LOQ	Computed concentration fell below half the Limit of Quantification in a Solvent Blank or Process Blank; no further action required
*	Semi-quantitative; analytes have an authentic standard but no matched internal standard[1]
**	Qualitative; analytes have neither an authentic standard nor a matched internal standard[1]
N/A	No authentic standard available[1]
Solvent Overspike	Solvent mixture spiked with standard, run between samples to check instrument performance (replicate of calibration standard)
Solvent Blank	Contains the solvent matrix and mass-labeled standards
Surrogate Recovery	Mass-labelled standard spiked into all samples and dilution blanks after dilution to determine recovery of the mass-labelled standard in each sample
%RSD	Relative standard deviation; computed by dividing the standard deviation of n=3 replicates of Solberg Mil Spec 6% AFFF concentrations by the average concentration
> (Value)	Concentration is higher than the top point on the calibration curve

Analyte List
Perfluoroalkyl Carboxylates -11
Perfluoro-n-butanoic acid (PFBA)

Perfluoro-n-pentanoic acid (PFPeA)
Perfluoro-n-hexanoic acid (PFHxA)
Perfluoro-n-heptanoic acid (PFHpA)
Perfluoro-n-octanoic acid (PFOA)
Perfluoro-n-nonanoic acid (PFNA)
Perfluoro-n-decanoic acid (PFDA)
Perfluoro-n-undecanoic (PFUdA)
Perfluoro n-dodecanoic (PFDoA)
Perfluoro n-tridecanoic (PFTrDA)
Perfluoro n-tetradecanoid (PFTeDA)

Perfluoroalkyl Sulfonates-9

Perfluoro-1-ethanesulfonate (PFEtS)**
Perfluoro-1-propanesulfonate (PFPrS)**
Perfluoro-1-butanesulfonate (PFBS)
Perfluoro-1-pentanesulfonate (PFPeS)
Perfluoro-1-hexanesulfonate (PFHxS)
Perfluoro-1-heptanesulfonate (PFHpS)
Perfluoro-1-octanesulfonate (PFOS)
Perfluoro-1-nonanesulfonate (PFNS)
Perfluoro-1-decanesulfonate (PFDS)

Fluorotelomer Sulfonates-3

1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FtS)
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FtS)
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FtS)

Perfluoroalkyl Sulfonamido Amines-6

N-(3-(dimethylamino)propyl)-perfluoropropane-1-sulfonamide (PFPrSaAm)**
N-(3-(dimethylamino)propyl)-perfluorobutane-1-sulfonamide (PFBSaAm)**
N-(3-(dimethylamino)propyl)-perfluoropentane-1-sulfonamide (PFPeSaAm)**
N-(3-(dimethylamino)propyl)-perfluorohexane-1-sulfonamide (PFHxSaAm)**
N-(3-(dimethylamino)propyl)-perfluoroheptane-1-sulfonamide (PFHpSaAm)**
N-(3-(dimethylamino)propyl)-perfluorooctane-1-sulfonamide (PFOSaAm)**

Perfluoroalkyl Sulfonamide Amino Carboxylates-6

3-(N-(3-(dimethylamino)propyl)-perfluoropropylsulfonamido)propanoic acid (PFPrSaAmA)**
3-(N-(3-(dimethylamino)propyl)-perfluorobutylsulfonamido)propanoic acid (PFBSaAmA)**
3-(N-(3-(dimethylamino)propyl)-perfluoropentylsulfonamido)propanoic acid (PFPeSaAmA)**
3-(N-(3-(dimethylamino)propyl)-perfluorohexylsulfonamido)propanoic acid (PFHxSaAmA)**
3-(N-(3-(dimethylamino)propyl)-perfluorohepylsulfonamido)propanoic acid (PFHpSaAmA)**
3-(N-(3-(dimethylamino)propyl)-perfluorooctylsulfonamido)propanoic acid (PFOSaAmA)**

Fluorotelomer Thioether Amido Sulfonates-3

2-methyl-2-(3-((1H,1H,2H,2H-perfluoro-1-hexyl)thio)propanamido)propane-1-sulfonate (4-2 FtTAoS)**
2-methyl-2-(3-((1H,1H,2H,2H-perfluoro-1-octyl)thio)propanamido)propane-1-sulfonate (6-2 FtTAoS)*
2-methyl-2-(3-((1H,1H,2H,2H-perfluoro-1-decyl)thio)propanamido)propane-1-sulfonate (8-2 FtTAoS)**

Fluorotelomer Thio Hydroxy Ammonium-2

2-hydroxy-N,N,N-trimethyl-3-((1H,1H,2H,2H-perfluoro-1-octyl)thio)propan-1-aminium (6-2 FtTHN^{+})*

2-hydroxy-N,N,N-trimethyl-3-((1H,1H,2H,2H-perfluoro-1-decyl)thio)propan-1-aminium (8-2 FtTHN$^+$)*

Fluorotelomer Sulfonamide Amine-2

N-[3-(dimethylamino) propyl]-1H,1H,2H,2H-perfluoro-1-octanesulfonamide (6-2 FtSaAm)*

N-[3-(dimethylamino) propyl]-1H,1H,2H,2H-perfluoro-1-decanesulfonamide (8-2 FtSaAm)**

Fluorotelomer Sulfonamido Betaines-4

N-(carboxymethyl)-N,N-dimethyl-3-(1H,1H,2H,2H-perfluoro-1-octanesulfonamido)propan-1-aminium (6-2 FtSaB)*

N-(carboxymethyl)-N,N-dimethyl-3-(1H,1H,2H,2H-perfluoro-1-decanesulfonamido)propan-1-aminium (8-2 FtSaB)**

N-(carboxymethyl)-N,N-dimethyl-3-(1H,1H,2H,2H-perfluoro-1-dodecanesulfonamido)propan-1-aminium (10-2 FtSaB)**

N-(carboxymethyl)-N,N-dimethyl-3-(1H,1H,2H,2H-perfluoro-1-tetradecanesulfonamido)propan-1-aminium (12-2 FtSaB)**

Fluorotelomer Betaines-6

N-(carboxymethyl)-1H,1H,2H,2H,3H -N,N-dimethylperfluorooctan-1-aminium (5-1-2 FtB)*

N-(carboxymethyl)-1H,1H,2H,2H,3H -N,N-dimethylperfluorodecan-1-aminium (7-1-2 FtB)*

N-(carboxymethyl)-1H,1H,2H,2H,3H -N,N-dimethylperfluorododecan-1-aminium (9-1-2 FtB)*

N-(carboxymethyl)-1H,1H,2H,2H,3H,3H -N,N-dimethylperfluorooctan-1-aminium (5-3 FtB)*

N-(carboxymethyl)-1H,1H,2H,2H,3H,3H -N,N-dimethylperfluorodecan-1-aminium (7-3 FtB)*

N-(carboxymethyl)-1H,1H,2H,2H,3H,3H -N,N-dimethylperfluorododecan-1-aminium (9-3FtB)*

REFERENCES

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2. Barzen-Hanson, K. A.; Field, J. A., Discovery and Implications of C2 and C3 Perfluoroalkyl Sulfonates in Aqueous Film-Forming Foams and Groundwater. *Environ. Sci. Technol. Lett.* **2015,** *2*, (4), 95-99.

3. Place, B. J.; Field, J. A., Identification of Novel Fluorochemicals in Aqueous Film-Forming Foams Used by the US Military. *Environ. Sci. Technol.* **2012,** *46*, (13), 7120-7127.

4. D'Agostino, L. A.; Mabury, S. A., Identification of Novel Fluorinated Surfactants in Aqueous Film Forming Foams and Commercial Surfactant Concentrates. *Environ. Sci. Technol.* **2013,** *48*, (1), 121-129.

			C4 PFBA (mg/L)	C5 PFPeA (mg/L)	C6 PFHxA (mg/L)	C7 PFHpA (mg/L)	C8 PFOA (mg/L)	C9 PFNA (mg/L)	C10 PFDA (mg/L)	C11 PFUdA (mg/L)	C12 PFDoA (mg/L)	C13 PFTrDA (mg/L)	C14 PFTeDA (mg/L)
	Samples												
	Solberg Arctic 3%		0.31	<LOD	0.72	<LOD	<LOD	<LOQ	<LOQ	<LOD	<LOD^	<LOD^	<LOD^
	Solberg Arctic 3x3		<LOQ	<LOD	0.11	<LOD	<LOQ @	<LOD	<LOD	<LOD	<LOD^	<LOD^	<LOD^
	Solberg Mil Spec 6%		0.25	<LOQ	0.62	<LOD	<LOD	<LOQ	<LOD	<LOD	<LOD^	<LOD^	<LOD^
	Solberg Mil Spec 3%		1.1	<LOQ	1.4	<LOD	<LOD	<LOQ	<LOD	<LOD	<LOD^	<LOD^	<LOD^
	% RSD		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	QC	Acceptance Limit											
n = 1	Solvent Overspike 100 ng/L #1	70 - 130 ng/L	120	100	110	110	85	100	92	110	^	^	^
n = 1	Solvent Overspike 500 ng/L #1	350 - 650 ng/L	520	470	500	500	560	490	510	410	^	^	^
n = 1	Solvent Overspike 100 ng/L #2	70 - 130 ng/L	110	100	110	94	120	91	96	110	^	^	^
n = 1	Solvent Overspike 500 ng/L #2	350 - 650 ng/L	530	470	430	680***	670***	600	400	420	^	^	^
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD^	<LOD^	<LOD^
n = 1	Solvent Blank #2	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	< ½ LOQ @	<LOD	<LOD	<LOD	<LOD^	<LOD^	<LOD^
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD^	<LOD^	<LOD^
6-9 points	Linearity (R^2)	$R^2 > 0.97$	0.99	0.99	0.99	0.99	0.99	0.98	0.99	0.99	^	^	^
	Method Limits												
	Limit of Detection (mg/L)		0.0041	0.0011	0.0014	0.0018	0.0015	0.0010	0.00094	0.00093	0.0010	0.0012	0.0017
	Limit of Quantitation (mg/L)		0.1	0.1	0.1	0.15	0.1	0.15	0.15	0.1	0.1	0.1	0.1

^ Due to poor chromatographic peak shape for PFDoDA, PFTrDA, and PFTeDA, no concentrations were computed. Results reported are qualitative. Reanalysis was not deemed necessary since these analytes were not found in the samples.

@Contamination coming from an impurity in the mass-labelled standard.

***Did not pass

Surrogate Recovery			M2-PFOA (ng/L)
		Acceptance Limit	
	Samples		
	Solberg Arctic 3%	7.0 – 13 ng/L	11
	Solberg Arctic 3x3	7.0 – 13 ng/L	19***
	Solberg Mil Spec 6%	7.0 – 13 ng/L	13
	Solberg Mil Spec 3%	7.0 – 13 ng/L	13
	% RSD		20
	QC	Acceptance Limit	
n = 1	Solvent Overspike 30 ng/L #1	21 – 39 ng/L	24
n = 1	Solvent Overspike 100 ng/L #1	70 - 130 ng/L	95
n = 1	Solvent Overspike 30 ng/L #1	21 – 39 ng/L	28
n = 1	Solvent Overspike 100 ng/L #1	70 - 130 ng/L	110
	Dilution Blank	< ½ LOQ	<LOD
7 points	Linearity (R^2)	$R^2 > 0.97$	0.99
	Method Limits		
	Limit of Detection (LOD) (ng/L)		N/A
	Limit of Quantitation (LOQ) (ng/L)		N/A

***Did not pass

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			C2 PFEtS** (mg/L)	C3 PFPrS** (mg/L)	C4 PFBS (mg/L)	C5 PFPeS (mg/L)	C6 PFHxS (mg/L)	C7 PFHpS (mg/L)	C8 PFOS (mg/L)	C9 PFNS (mg/L)	C10 PFDS (mg/L)
	Samples										
	Solberg Arctic 3%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Arctic 3x3		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Mil Spec 6%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Mil Spec 3%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	% RSD		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	QC	Acceptance Limit									
n = 1	Solvent Overspike 100 ng/L #1	70 - 130 ng/L	N/A	N/A	80	91	100	130	97	97	93
n = 1	Solvent Overspike 500 ng/L #1	350 - 650 ng/L	N/A	N/A	360	430	450	560	460	420	430
n = 1	Solvent Overspike 100 ng/L #2	70 - 130 ng/L	N/A	N/A	79	91	96	130	99	89	92
n = 1	Solvent Overspike 500 ng/L #2	350 - 650 ng/L	N/A	N/A	360	410	400	520	600	490	560
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
6-8 points	Linearity (R^2)	$R^2 > 0.97$	N/A, calculated using PFBS		0.98	0.99	0.99	0.99	0.99	0.99	0.99
	Method Limits										
	Limit of Detection (mg/L)		N/A	N/A	0.0012	N/A	0.0017	0.00088	0.00081	N/A	0.00071
	Limit of Quantitation (mg/L)		N/A	N/A	0.1	N/A	0.1	0.15	0.1	N/A	0.1

			4-2 FtS (mg/L)	6-2 FtS (mg/L)	8-2 FtS (mg/L)
	Samples				
	Solberg Arctic 3%		<LOD	35	<LOD
	Solberg Arctic 3x3		<LOD	5	<LOD
	Solberg Mil Spec 6%		<LOQ	34	<LOQ
	Solberg Mil Spec 3%		<LOQ	37	1.1
	% RSD		N/A	19	N/A
	QC	Acceptance Limit			
n = 1	Solvent Overspike 100 ng/L #1	70 - 130 ng/L	130	190***	92
n = 1	Solvent Overspike 500 ng/L #1	350 - 650 ng/L	830***	380	520
n = 1	Solvent Overspike 100 ng/L #2	70 - 130 ng/L	170***	84	100
n = 1	Solvent Overspike 500 ng/L #2	350 - 650 ng/L	640	420	640
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	<LOD	<LOD	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD
5-7 points	Linearity (R^2)	$R^2 > 0.97$	0.99	0.98	0.98
	Method Limits				
	Limit of Detection (mg/L)		0.016	0.084	0.019
	Limit of Quantification (mg/L)		0.15	0.15	0.15

***Did not pass

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			C3 PFPrSaAm ** (mg/L)	C4 PFBSaAm ** (mg/L)	C5 PFPeSaAm ** (mg/L)	C6 PFHxSaAm ** (mg/L)	C7 PFHpSaAm ** (mg/L)	C8 PFOSaAm ** (mg/L)
	Samples							
	Solberg Arctic 3%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Arctic 3x3		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Mil Spec 6%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Mil Spec 3%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	% RSD		N/A	N/A	N/A	N/A	N/A	N/A
	QC	Acceptance Limit						
n = 1	Solvent Overspike 100 ng/L #1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Overspike 500 ng/L #1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Overspike 100 ng/L #2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Overspike 500 ng/L #2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Linearity (R^2)	$R^2 > 0.97$	N/A, calculated using PFOS calibration					
	Method Limits							
	Limit of Detection (mg/L)		N/A	N/A	N/A	N/A	N/A	N/A
	Limit of Quantitation (mg/L)		N/A	N/A	N/A	N/A	N/A	N/A

			C3 PFPrSaAmA** (mg/L)	C4 PFBSaAmA** (mg/L)	C5 PFPeSaAmA** (mg/L)	C6 PFHxSaAmA** (mg/L)	C7 PFHpSaAmA** (mg/L)	C8 PFOSaAmA** (mg/L)
	Samples							
	Solberg Arctic 3%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Arctic 3x3		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Mil Spec 6%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Solberg Mil Spec 3%		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	% RSD		N/A	N/A	N/A	N/A	N/A	N/A
	QC	Acceptance Limit						
n = 1	Solvent Overspike 100 ng/L #1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Overspike 500 ng/L #1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Overspike 100 ng/L #2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Overspike 500 ng/L #2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Linearity (R^2)	$R^2 > 0.97$	N/A, calculated using PFOS calibration					
	Method Limits							
	Limit of Detection (LOD) (mg/L)		N/A	N/A	N/A	N/A	N/A	N/A
	Limit of Quantitation (LOQ) (mg/L)		N/A	N/A	N/A	N/A	N/A	N/A

			4-2 FtTAoS** (mg/L)	6-2 FtTAoS* (mg/L)	8-2 FtTAoS** (mg/L)
	Samples				
	Solberg Arctic 3%		<LOD	590	<LOQ
	Solberg Arctic 3x3		<LOD	890	<LOD
	Solberg Mil Spec 6%		<LOQ	290	<LOD
	Solberg Mil Spec 3%		<LOQ	810	<LOQ
	% RSD		N/A	2	N/A
	QC	Acceptance Limit			
n = 1	Solvent Overspike 100 ng/L #1	70 - 130 ng/L	N/A	340***	N/A
n = 1	Solvent Overspike 500 ng/L #1	350 - 650 ng/L	N/A	650	N/A
n = 1	Solvent Overspike 100 ng/L #2	70 - 130 ng/L	N/A	350***	N/A
n = 1	Solvent Overspike 500 ng/L #2	350 - 650 ng/L	N/A	910***	N/A
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	<LOD	<LOQ***#	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD
5 points	Linearity (R^2)	$R^2 > 0.97$	N/A	0.99	N/A
	Method Limits				
	Limit of Detection (mg/L)		N/A	N/A	N/A
	Limit of Quantification (mg/L)		N/A	2.5	N/A

***Did not pass

Note: All quantitative results were collected before Solvent Overspike 500 ng/L #1, so the data are considered valid.

#Solvent Blank #2 did not pass due to a high concentration run immediately before this QC and is attributed to carryover.

	Samples		6-2 FtTHN* (mg/L)	8-2 FtTHN** (mg/L)
	Solberg Arctic 3%		40	<LOD
	Solberg Arctic 3x3		67	<LOD
	Solberg Mil Spec 6%		18	<LOD
	Solberg Mil Spec 3%		33	<LOD
	% RSD		2	N/A
	QC	Acceptance Limit		
n=1	Solvent Overspike 150 ng/L #1	110 - 200 ng/L	71***	N/A
n=1	Solvent Overspike 750 ng/L #1	530-980 ng/L	330***	N/A
n=1	Solvent Overspike 150 ng/L #2	110 - 200 ng/L	120	N/A
n=1	Solvent Overspike 750 ng/L #2	530-980 ng/L	910	N/A
n = 1	Solvent Blank #1	< ½ LOQ	17***	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	45***#	<LOD
	Dilution Blank	< ½ LOQ	<LOQ***	<LOD
5 points	Linearity (R^2)	$R^2 > 0.97$	0.97	N/A
	Method Limits			
	Limit of Detection (mg/L)		N/A	N/A
	Limit of Quantification (mg/L)		0.15	N/A

***Did not pass

#Solvent Blank #2 did not pass due to a high concentration run immediately before this QC and is attributed to carryover.

Note: The 6-2 FtTHN tends to stick more to the column than the other analytes. Due to the high concentrations of the 6-2 FtTHN in these samples, a small amount of carryover is observed in the Solvent Blanks and Dilution Blank.

Note: Since the second set of Solvent Overspikes passed, the data are considered valid, and no reanalysis was deemed necessary.

	Samples		6-2 FtSaB* (mg/L)	8-2 FtSaB** (mg/L)	10-2 FtSaB** (mg/L)	12-2 FtSaB** (mg/L)
	Solberg Arctic 3%		620	<LOQ	<LOD	<LOD
	Solberg Arctic 3x3		110	<LOD	<LOD	<LOD
	Solberg Mil Spec 6%		240	<LOQ	<LOQ	<LOD
	Solberg Mil Spec 3%		460	4.4	<LOQ	<LOD
	% RSD		7.7	N/A	N/A	N/A
	QC	Acceptance Limit				
n=1	Solvent Overspike 1000 ng/L #1	700-1300 ng/L	1200	N/A	N/A	N/A
n=1	Solvent Overspike 5000 ng/L #1	3500-6500 ng/L	6400	N/A	N/A	N/A
n=1	Solvent Overspike 1000 ng/L #2	700-1300 ng/L	1300	N/A	N/A	N/A
n=1	Solvent Overspike 5000 ng/L #2	3500-6500 ng/L	6300	N/A	N/A	N/A
n = 1	Solvent Blank #1	< ½ LOQ	< ½ LOQ	<LOD	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	< ½ LOQ	<LOD	<LOD	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD	<LOD
8 points	Linearity (R^2)	$R^2 > 0.97$	0.99	N/A	N/A	N/A
	Method Limits					
	Limit of Detection (mg/L)		N/A	N/A	N/A	N/A
	Limit of Quantification (mg/L)		1.0	N/A	N/A	N/A

			6-2 FtSaAm* (mg/L)	8-2 FtSaAm** (mg/L)
	Samples			
	Solberg Arctic 3%		140	<LOD
	Solberg Arctic 3x3		18	<LOQ
	Solberg Mil Spec 6%		55	1.3
	Solberg Mil Spec 3%		150	4.3
	% RSD		7.7	N/A
	QC			
		Acceptance Limit		
n = 1	Solvent Spike 810 ng/L #1	570 - 1100 ng/L	750	N/A
n = 1	Solvent Spike 4100 ng/L #1	3000 - 5300 ng/L	2200***	N/A
n = 1	Solvent Spike 810 ng/L #2	570 - 1100 ng/L	830	N/A
n = 1	Solvent Spike 4100 ng/L #2	3000 - 5300 ng/L	4400	N/A
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	<LOQ***#	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD
7 points	Linearity (R^2)	R^2 > 0.97	0.99	N/A
	Method Limits			
	Limit of Detection (mg/L)		N/A	N/A
	Limit of Quantification (mg/L)		0.81	N/A

***Did not pass

#Solvent Blank #2 did not pass due to a high concentration run immediately before this QC and is attributed to carryover.

	Samples		5-1-2 FtB* (mg/L)	7-1-2 FtB* (mg/L)	9-1-2 FtB* (mg/L)	5-3 FtB* (mg/L)	7-3 FtB* (mg/L)	9-3 FtB* (mg/L)
	Solberg Arctic 3%		<LOD	<LOQ&	<LOD	<LOD	<LOQ&	<LOD
	Solberg Arctic 3x3		<LOD	<LOD	<LOD	<LOD	<LOQ&	<LOD
	Solberg Mil Spec 6%		<LOQ$	<LOQ&	<LOQ&	<LOD	<LOQ&	<LOD
	Solberg Mil Spec 3%		<LOQ$	<LOQ&	<LOQ&	<LOQ$	<LOQ&	<LOQ&
	% RSD		N/A	N/A	N/A	N/A	N/A	N/A
	QC	Acceptance Limit						
n = 1	Solvent Spike Low #1	70-130%	200	230***	59***	50	95	16***
n = 1	Solvent Spike Mid #1	70-130%	1000	1240***	330***	250	340***	91***
n = 1	Solvent Spike Low #2	70-130%	200	230***	67***	50	97	17***
n = 1	Solvent Spike Mid #2	70-130%	990	1420	430	240	400	110
n = 1	Solvent Blank #1	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
n = 1	Solvent Blank #2	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
	Dilution Blank	< ½ LOQ	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
5-9 points	Linearity (R^2)	$R^2 > 0.97$	0.99	0.99	0.99	0.99	0.99	0.98
	Accepted Range							
	Solvent Overspike Low	70 - 130%	130 - 250	280 - 520	77 - 140	35 - 65	70 - 130	19 - 35
	Solvent Overspike Mid	70 - 130%	670 - 1300	1400 - 2600	370 - 700	170 - 310	350 - 650	94 - 170
	Method Limits							
	Limit of Detection (mg/L)		N/A	N/A	N/A	N/A	N/A	N/A
	Limit of Quantification (mg/L)		0.19	0.4	0.16	0.048	0.50	0.04

***Did not pass

$A peak was present for the quantitative transistion, but the qualitative transistion was not present. There is great uncertainty about whether these analytes are actually present without a qualitative transistion.

& 7-1-2 FtB, 7-3 FtB (for all AFFFs) and 9-1-2, 9-3 FtB (for some AFFFs) had large peaks present for the quantitative transition, and sometimes a low abundance qualitative transition. However, without the presence of a qualitative transistion, there is great uncertainty about whether these analytes are actually present. When a qualitative transition was present, the ion ratio (the ratio of the quantitative transition area counts to the qualitative transition area counts) was very different than the ion ratios in the calibration curve and Solvent Overspikes. Ion ratios for a given analyte should be constant. Therefore, there is overwhelming evidence that these analytes are not present in the AFFFs.

Note: Due to the great uncertainty about the presence of these analytes in the AFFFs, reanalysis was not deemed necessary.

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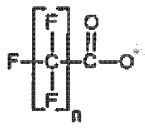
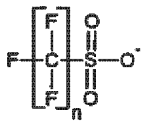
Perfluoroalkyl Carboxylates[L]



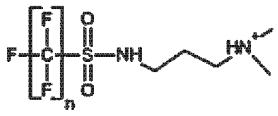
PFBA	n = 3
PFPeA	n = 4
PFHxA	n = 5
PFHpA	n = 6
PFOA	n = 7
PFNA	n = 8
PFDA	n = 9
PFUdA	n = 10
PFDoA	n = 11
PFTrDA	n = 12
PFTeDA	n = 13

Perfluoroalkyl Sulfonates[L]



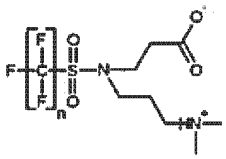
PFEtS	n = 2
PFPrS	n = 3
PFBS	n = 4
PFPeS	n = 5
PFHxS	n = 6
PFHpS	n = 7
PFOS	n = 8
PFNS	n = 9
PFDS	n = 10

Perfluoroalkyl Sulfonamido Amines[N]



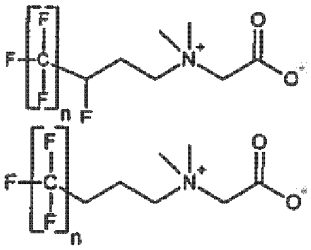
PFPrSaAm	n = 3
PFBSaAm	n = 4
PFPeSaAm	n = 5
PFHxSaAm	n = 6
PFHpSaAm	n = 7
PFOSaAm	n = 8

Perfluoroalkyl Sulfonamide Amino Carboxylates[N]



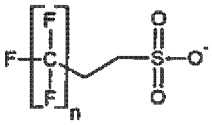
PFPrSaAmA	n = 3
PFBSaAmA	n = 4
PFPeSaAmA	n = 5
PFHxSaAmA	n = 6
PFHpSaAmA	n = 7
PFOSaAmA	n = 8

Fluorotelomer Betaines[N]



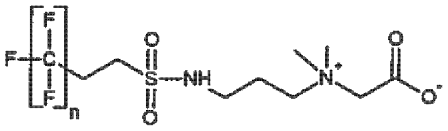
5-1-2 FtB	n = 5
7-1-2 FtB	n = 7
9-1-2 FtB	n = 9
5-3 FtB	n = 5
7-3 FtB	n = 7
9-3 FtB	n = 9

Fluorotelomer Sulfonates[L]



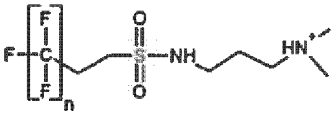
4-2 FtS	n = 4
6-2 FtS	n = 6
8-2 FtS	n = 8

Fluorotelomer Sulfonamido Betaines[N]



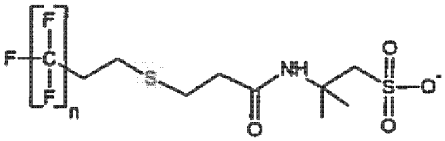
6-2 FtSaB	n = 6
8-2 FtSaB	n = 8
10-2 FtSaB	n = 10
12-2 FtSaB	n = 12

Fluorotelomer Sulfonamido Amines[N]



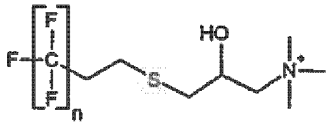
6-2 FtSaAm	n = 6

Fluorotelomer Thio Amido Sulfonates[N]



4-2 FtTAoS	n = 4
6-2 FtTAoS	n = 6
8-2 FtTAoS	n = 8

Fluorotelomer Thio Hydroxy Ammonium[N]



6-2 FtTHN+	n = 6
8-2 FtTHN+	n = 8